connected to the detector elements [(10A, 10B, 10C, 10D)] of the photodetector [(10)] and [which output] providing the output signal [(A+C, B+D)].

4. (Amended) The apparatus according to Claim 3, further comprising edge detectors [(21, 21')] and phase angle detectors [(22, 22')], to which the output signals [(A, B, C, D, A+C, B+D)] are fed and whose outputs are connected to the phase [detector (13)] forming unit and to the edge sequence detector [(14)].

5. (Amended) The apparatus according to Claim 2, further comprising edge detectors [(21, 21')] and phase angle detectors [(22, 22')], to which the output signals [(A, B, C, D, A+C, B+D)] are fed and whose outputs are connected to the phase [detector (13)] forming unit and to the edge sequence detector [(14)].

6. (Amended) The apparatus according to Claim 1, further comprising diagonal summation signal forming units [(11, 12) whose] having inputs [are] connected to the detector elements [(10A, 10B, 10C, 10D)] of the photodetector [(10)] and [which output] providing the output signal [(A+C, B+D)].

7. (Amended) The apparatus according to Claim 1, further comprising edge detectors [(21, 21')] and phase angle detectors [(22, 22')], to which the output signals [(A, B, C, D, A+C, B+D)] are fed and whose outputs are connected to the phase [detector (13)] forming unit and to the edge sequence detector [(14)].

8. (Amended) The apparatus according to one of Claim 1, wherein the phase forming unit [(13)] and the edge sequence detector [(14)] are integrated.

9. (Amended) The apparatus according to claim 1, further comprising a fault indicator [(25), which is] connected to an output of the edge sequence detector [(14)].

10. (Amended) A method for determining a correct track error signal [(TE) in accordance with a] utilizing a phase detection method, comprising the steps of:

checking [of the] a sequence of zero crossings [(a, b)] of signals [(A, B, C, D, A+C, B+D),] whose [phase is] phases are detected[,] with regard to impermissible sequences[,] ; and

preventing the outputting of a phase value [(φ)] when an impermissible sequence is [present] detected.

11. (Amended) The method of Claim 10, wherein a sequence of more than two successive zero crossings of one of the signals [signal (A, B, C, D, A+C, B+D)] without the occurrence of a zero crossing in [the other signal (A, B, C, D, B+D, A+C)] another of the signals is an impermissible sequence.

12. (Amended) The method of Claim 10, wherein a sequence of more than one pair of zero crossings within a predetermined time period, a pair of zero crossings consisting of a zero crossing of one [signal (A, B, C, D, A+C, B+D)] of the signals and a succeeding zero crossing of [the other signal (A, B, C, D, B+D, A+C)] another one of the signals, is an impermissible sequence.

13. (Amended) The method of Claim 10, wherein an error indication signal [(FI)] is generated as a function of the accumulation of impermissible sequences.

14. (Amended) The method of Claims 10, wherein the signals [(A, B, C, D, A+C, B+D)] are evaluated in a predetermined clock cycle [(T)], a zero crossing [(a, b)] being present if one of two successive values [(a_n, a_{n-1}, b_n, b_{n-1})] of the signal [(A, B, C, D, A+C, B+D)] lies above, and the other of the said values lies below, a reference value [(SL1, SL2)], and the temporal position of the zero crossing [(a, b)] is interpolated using these two values [(a_n, a_{n-1}, b_n, b_{n-1})].

15. (Amended) The method of Claim 14, wherein the phase value [(φ)] between a zero crossing [(a, b)] of one signal of the signals [(A, B, C, D, A+C, B+D)] and a zero crossing [(b, a)] of [the other signal (A, B, C, D, B+D, A+C)] another of the signals is determined from the respective interpolated temporal position [(t_1, t_2] and the number of clock cycles [(T_A)] lying between the zero crossings [(a, b)].

16. (Amended) The method of Claim 10, further comprising the step of extrapolating the track error signal [(TE)] in the event of an impermissible sequence.

17. (Amended) The method of Claim 10, wherein the phase detection method is the differential phase detection method, the signals to be compared being the diagonal summation signals [(A+C, B+D)].